

Remarks

Applicant and the undersigned would like to thank the Examiner for his efforts in the examination of this application. Reconsideration is respectfully requested.

I. Rejection of Claims 1, 2, 4, 5, 7, 10, 29, 39-42, 44-49, 51, and 52 under 35 USC 103(a)

The Examiner has rejected Claims 1, 2, 4, 5, 7, 10, 29, 39-42, 44-49, 51, and 52 under 35 USC 103(a) as being unpatentable over Davey (US 5,770,794) in view of Haupt (US 4,344,320).

This rejection is respectfully traversed. Independent Claims 1, 29, 39, and 46 will be discussed first. For the following reasons, Applicant respectfully asserts that the Examiner has failed to establish a *prima facie* case of obviousness, and, further that the combination of the cited art teaches away from the claimed invention.

The Examiner grants that Davey '794 teaches the use of a constant vacuum (negative pressure), which is completely contrary to the recitations of Claims 1, 29, 39, and 46, each of which recites "providing a source of a first fluid at a first pressure *greater than* said ambient pressure".

A device formed by the combination of the cited art would actually threaten the stability of the sensor manifolds employed in Davey '794, and is therefore to be avoided. Further, the use of the device of Davey '794 in the manner of the present invention as claimed would induce rather than prevent moisture induction. As discussed in the Specification, it is the ingress of moisture that is largely responsible for failures of the

structures of interest. It is a requirement of Davey '794 that a relative vacuum be used, as is clear from the Specification of that reference and in Claim 1, which is limited to an apparatus comprising a substantially constant vacuum.

Haupt '320 absolutely requires the use of positive pressure, as is clear from the Specification of that reference as a whole. There is no suggestion or teaching to use a relative vacuum. Indeed, the device of Haupt '320 would be inoperable if the helium gas were placed under vacuum conditions relative to a maximum pressure of liquefied gas in the container of Haupt.

Further, Davey and Haupt are directed to fundamentally different inventions, which mitigates against the propriety of their combination. Haupt is directed to the detection of a crack in an impervious pipe; Davey, to monitoring variations in the vacuum conditions of inherently permeable structures.

Therefore, the Examiner has not established *prima facie* obviousness of Claims 1, 29, 39, and 46. In establishing a *prima facie* case of obviousness, the Office must establish three elements (MPEP §2143):

- (1) that the prior art contains a suggestion or motivation to combine the cited references in such a way as to achieve the claimed invention;
- (2) that one skilled in the art at the time the invention was made would have reasonably expected the claimed invention to work; and
- (3) that the combination must teach or suggest all the claim limitations, that is, that the combination produces the claimed invention.

In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); In re O'Farrell, 853 F.2d 894, 903-904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988); In re Dow Chem., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988).

Neither Davey nor Haupt expresses a teaching, suggestion, or incentive that would lead a person skilled in the art to combine the references. The Federal Circuit has long established that

[o]bviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.

ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1987).

It is established that a court will first look to the prior art references to determine whether "the references by themselves . . . suggest doing what [Applicants] have done." In re Clinton 527 F.2d 1226, 1228, 188 USPQ 365, 367 (CCPA 1976). The Examiner has not established such showing.

Even if all the elements of a claim were to be disclosed in the various prior art references, which Applicant disputes in this case, the claimed invention as a whole cannot be said to be obvious without some reason given in the prior art why a skilled worker would combine the teachings of the references to arrive at the claimed invention. In re Regel, 188 USPQ 132 (CCPA 1975). The Examiner does not point out any such reason given in the prior art. In the absence of such reason or suggestion, the Examiner fails to establish a *prima facie* case of obviousness.

Therefore, it is respectfully believed that independent Claims 1, 29, 39, and 46 patentably define over the cited art, and that Claims 2, 4, 5, 7, 10, 40-42, 44, 45, 47-49, 51, and 52, dependent therefrom, also patentably define over the cited art.

II. Amendment to Claims 1, 29, 39, and 46

Independent Claims 1, 29, 39, and 46 have been amended to more particularly point out that which Applicant regards as his invention, and not to further define over the cited art. In particular, these claims have been amended to remove the steady-state pressure stabilization step, and to therefore recite that a change in differential pressure is monitored in the final method step.

These amendments have been made in order to claim the situations in which (1) either the structure is formed so that there is some inherent permeability in the structure and cavity, in which case one would require a pressure differential across the impedance to stabilize; or (2) the structure is substantially completely impervious, in which case there would be no pressure differential until a breach occurs, and one therefore monitors for a change in differential pressure *per se*.

III. Rejection of Claims 6, 43, and 50 under 35 USC 103(a)

The Examiner has rejected Claims 6, 43, and 50 under 35 USC 103(a) as being unpatentable over Davey '794 in view of Haupt '320, and further in view of Schulte (US 5,390,533).

As these claims depend from independent Claims 1, 39, and 46, believed patentable, Claims 6, 43, and 50 are also believed to patentably define over the cited art.

IV. New Claims 53-64

New Claims 53-64 have been presented to more particularly point out that which Applicant regards as his invention.

These claims are directed to a “method of constructing and monitoring the integrity of a structure disposed in an environment containing a fluid at an ambient pressure”. In independent Claim 53, an initial step is recited as “constructing said structure of two or more structural elements and forming at least one cavity in or on the structure, wherein a portion of a surface of each of at least two of the structural elements forms a part of an internal surface of the cavity”. Thus, the cavity is recited as spanning at least two of the structural elements.

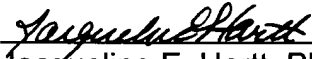
Haupt teaches no such method of constructing a structure. In Haupt, the cavities are provided by pipes internal to the structure. The cavities accordingly do not have, as part of their interior surface, a portion of the structure as defined by the proposed new claims.

Conclusions

Applicant respectfully submits that the above amendments place this application in a condition for allowance, and passage to issue is respectfully solicited. The Applicant and the undersigned would like to again thank the Examiner for his efforts in the examination

of this application and for reconsideration of the claims as amended in light of the arguments presented. If the further prosecution of the application can be facilitated through telephone interview between the Examiner and the undersigned, the Examiner is requested to telephone the undersigned at the Examiner's convenience.

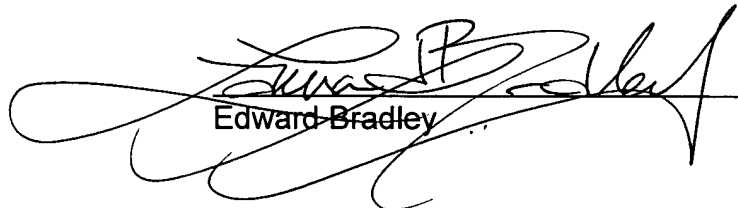
Respectfully submitted,



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CERTIFICATE OF MAILING

I hereby certify that the foregoing is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, this 19th day of April, 2005.



Edward Bradley